

State of California  
The Resources Agency  
Department of Water Resources  
Northern District

RECREATION USE SURVEY OF  
LITTLE LAST CHANCE CREEK, PLUMAS COUNTY

1988

Technical Information Report No. 89-1

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by

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This report was prepared to summarize information collected under Work Order 1501-0200 to document streamside recreation and fishing in Little Last Chance Creek provided by Frenchman Reservoir. This report has received only limited review; it is intended for internal use and should be considered preliminary and subject to revision.

June 1989

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## SUMMARY

A recreation use survey of Little Last Chance Creek in Plumas County was conducted during 1988 to estimate the amounts and types of streamside recreation use and angler success. This was the first such survey conducted on this stream since Frenchman Dam was constructed in 1961.

A stratified random sampling procedure was used to sample five miles of Little Last Chance Creek, from Frenchman Dam downstream to the Guidici Ranch Road. Interviews of recreationists, roving use counts, and a creel census were combined to gather information on recreation activities, visitor origin, and angler success.

There were an estimated 113,000 hours of recreation on Little Last Chance Creek between April 30 and November 15, 1988. The most frequently observed activities were camping, relaxing, fishing, wading/swimming, and a variety of campground related activities. About 85 to 90 percent of the observed use occurred at Chilcoot Campground.

Recreational visitors to Little Last Chance Creek came primarily from Nevada (about 67 percent). Visitors also came from 39 California counties.

Anglers caught an estimated 3,230 rainbow trout (0.44 trout per hour) and 840 brown trout (0.11 trout per hour) in 7,400 hours of fishing. Several large brown trout measuring 37.5 to 49.0 cm were censused. The mean lengths of angler-caught fish were 21.4 cm for rainbow trout, and 28.4 cm for brown trout.

The places of residence of anglers differed slightly from those of recreational visitors. Only about 47 percent were from Nevada, a few from Oregon, while a significant number (17 percent) came from the San Francisco Bay Area.

## INTRODUCTION

Frenchman Dam was built in 1961, by the Department of Water Resources, as part of the State Water Project (Figure 1). Its purpose was to regulate Little Last Chance Creek for irrigation in Sierra Valley and to enhance local recreation opportunities (DWR, 1957). The downstream release was intended to maintain, but not enhance the stream fishery. The reservoir is regulated mainly to supply downstream water rights and some contracted water.

This report describes the first recreation use survey of Little Last Chance Creek conducted since Frenchman Dam was built. The purpose of this survey was to estimate the amounts and types of recreation use and angler success occurring along the creek with augmented flow from Frenchman Reservoir.

Using a stratified random sampling procedure, the survey combined roving use counts with interviews of recreators in order to gather information on recreation activities, visitor origin, and angler success. Estimates of use were made for the period of April 30, 1988 to November 15, 1988. This report describes the recreation use survey, creel census, and results for the 1988 trout season. A separate report, prepared by the Department of Fish and Game (DFG), Contract Services Section, will describe a fish population survey conducted in October 1988.

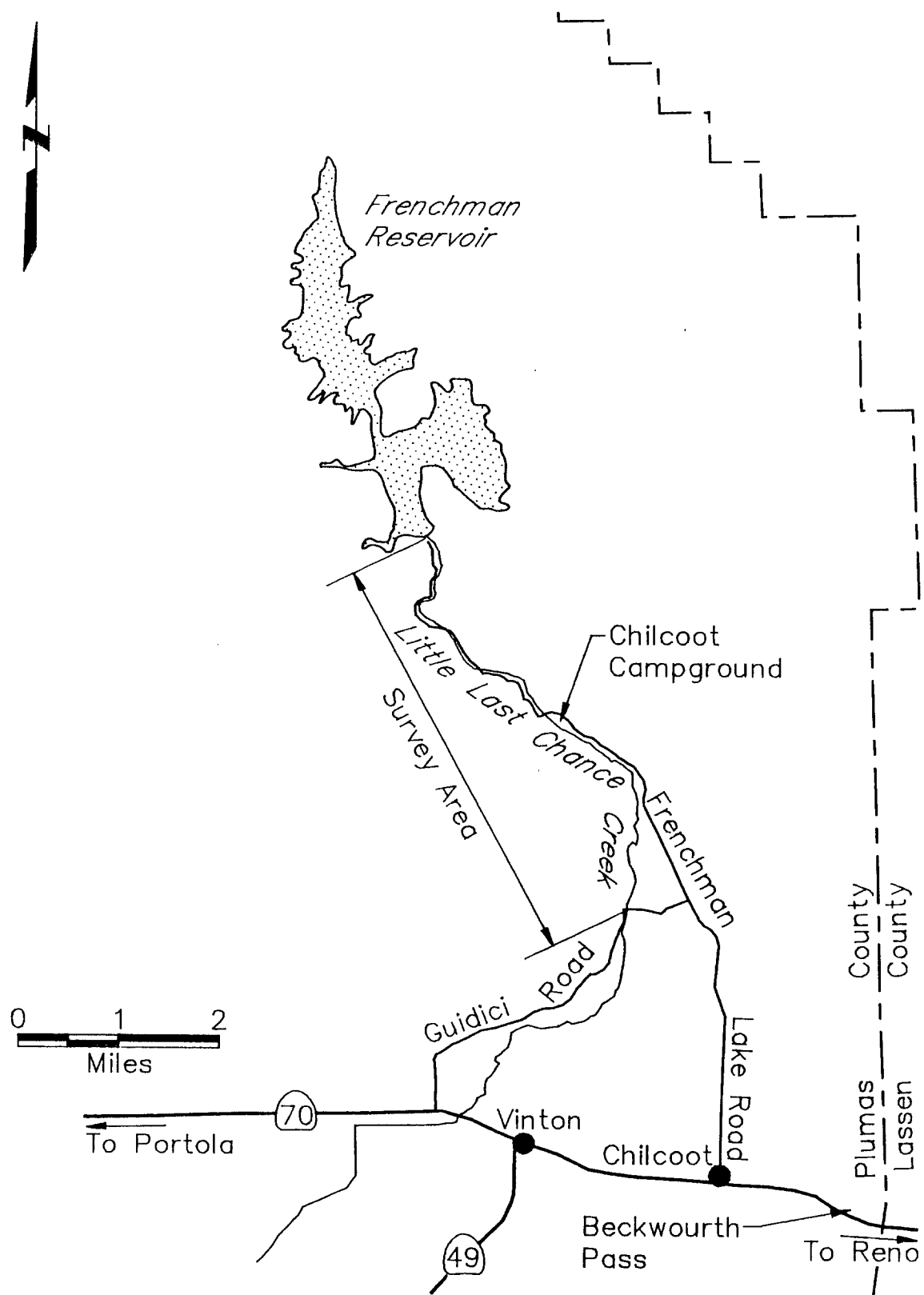


Figure 1 — Frenchman Reservoir and Little Last Chance Creek, Plumas County, 1988

## DESCRIPTION OF STUDY AREA

The survey area included about five miles of Little Last Chance Creek from Frenchman Dam (elevation 5500 feet) downstream to the Guidici Ranch Road (elevation 5000 feet).

Little Last Chance Creek is a tributary of the Middle Fork Feather River which feeds Frenchman Reservoir. Below Frenchman Dam, Little Last Chance Creek winds through a steep, lava rock canyon for about four miles, and then flows through the sagebrush country of Sierra Valley. It has an average width of about 17 feet, an average depth of 0.75 feet, and drains 81 square miles of watershed.

Frenchman Lake Road (State Highway 284) closely follows the creek and provides easy access to it and to camping facilities in Chilcoot Campground, operated by the U. S. Forest Service. Chilcoot Campground is located 2.8 miles downstream from Frenchman Reservoir and offers 40 campsites, potable water, and restroom facilities in an attractive setting. It is the only developed (and legal) camping area on the creek.

Summer streamflows in Little Last Chance Creek below Frenchman Dam vary widely depending on available water supply and irrigation demands in Sierra Valley. During the 1988 season, flows varied from a peak of 126 cubic feet per second (cfs) in mid-May to a minimum flow of 2 cfs after October 9. Streamflow was 4.5 cfs for the first 10 days of the trout season, increased to 126 cfs by May 21, then declined to 34 cfs by the end of the month. During June and early July, flows ranged from 9 to 46 cfs and averaged about 30 cfs. After July 7, flows declined to average about 12 cfs for the remainder of July and August (range 10 to 18 cfs). September and early October flows averaged near 4 cfs and then declined to the minimum flow of 2 cfs after October 10.

Species of fish known to occur in Little Last Chance Creek include: rainbow trout (Oncorhynchus mykiss), brown trout (Salmo trutta), Sacramento sucker (Catostomus occidentalis) and brown bullhead (Ictalurus nebulosus) (Brown, 1976 and files).

## METHODS

### Recreation Use Counts

Use counts were made on randomly selected dates within eight survey strata using the optimum allocation method described by Abramson and Tolladay (1959). Twenty-eight days of the 200-day period from April 30 through November 15, 1988, were surveyed (the Sierra District stream trout season). Five 1-hour counts of recreation use were made in the study area each day at regular periods, scheduled according to the number of daylight hours (Appendices I and II).

The surveys were made from vehicle or on foot, as necessary, to check access and recreation sites. Recreators (and their vehicles) were counted and recorded by recreation activity. The five daily counts were totaled and multiplied by factors that accounted for recreation use in the daylight periods not counted. Similarly, the resulting daily figures were expanded to estimate total recreation hours for all days in each stratum. Adding the stratum totals provided an estimate of recreation hours for the study period.

### Creel Census and Recreation Interviews

Between counts, recreation and angler success data were collected through personal interviews. Interviews were conducted on a per-vehicle basis. Length of stay was rounded to whole hours for day users, and nights plus one for overnight users. The activities recreationists intended to participate in, and their zip codes were also recorded.

Anglers along Little Last Chance Creek were contacted on 30 days to determine fishing success. The county of residence and length of time spent fishing so far that day (rounded to the nearest quarter hour) were recorded for each angler contacted. Fish censused were counted, measured (fork length to nearest 0.5 centimeter, and identified to species.

To determine total catch, the average catch per hour, derived from the creel census, was multiplied by estimated total hours of fishing for each stratum. Total weight of trout caught was calculated from estimated total catch and length-weight data from Little Last Chance Creek trout (Bumpass, et. al., 1989).

## RESULTS

### Recreation Use

Total recreation use on Little Last Chance Creek below Frenchman Reservoir was estimated at 113,000 recreation hours ( $\pm 15,000$  hours) for the period April 30 to November 15, 1988. With adjustments to account for the high proportion of overnight use, this is about 18,000 recreation days, or 13,000 12-hour visitor days. Based on counts of recreationists, camping and relaxing were the major activities, followed by fishing, swimming and wading, and a variety of largely campground-related uses (Table 1). Most of the observed use occurred at Chilcoot Campground (about 85 to 90 percent). Use counts reflect what people were doing when we counted them, and the approximate number of hours spent on each major activity. They do not provide data on other activities that people pursued at other times during their stay.

Table 1  
Recreation Hours by Activity  
Little Last Chance Creek, 1988

<u>Activity</u>	<u>Recreation Hours</u>	<u>Percent</u>
Camping	46,000	41
Relaxing	45,000	40
Fishing	7,400	7
Wading/Swimming	3,700	3
Walking	2,900	2
Children Playing	2,300	2
Sight-seeing	2,200	2
Picnic Use	2,100	2
Miscellaneous	1,400	1
Total	113,000	100

Interviews conducted during the 200-day survey period totaled 681, representing 1,787 people. Interviews of campers numbered 442 and represented 1,147 people. Day-use interviews numbered 166 and represented 444 people. The average number of visitors per vehicle was 2.6. The interviews provided more detailed information on activity participation and visitor characteristics.



About 80 percent of the people interviewed said they were "just relaxing", and 60 percent said they "walked for pleasure" during their stay. About 48 percent did some sightseeing, 36 percent fished in the creek, and 32 percent waded or swam in the creek. Nineteen percent picnicked in Chilcoot Campground or along the creek, and about 4 percent rode bicycles. About 23 percent of the people interviewed mentioned various other activities, including outdoor games and sports, table games, and gold panning. These percentages total more than 100 percent because many people engage in more than one activity during their visit.

Sixty-four percent (1,147) of the visitors interviewed camped overnight along the creek (all but 6 of these were at Chilcoot Campground). The average length of stay was 3.8 days.

Thirty-six percent (640) of the visitors interviewed used the stream corridor for day use, but did not stay overnight along the creek. About 31 percent of these day users stayed overnight somewhere in the general area, while the remainder returned home that night. The average length of day-use visits was 3.0 hours.

Of those who stayed overnight in the area, about 74 percent camped at Frenchman Reservoir or Lake Davis, 21 percent stayed with friends or relatives, and 5 percent stayed at private campgrounds, motels, or resorts. The average length of stay for those who stayed in the area was 3.3 days.

Forty-five percent of the campers said they used tents as their overnight accommodations. Nineteen percent used travel trailers, 13 percent used a motorhome, van, or bus, 12 percent used pickup campers, 6 percent slept out, and 5 percent used tent trailers.

The majority (69 percent) of recreational visitors to Little Last Chance Creek came from Nevada, mostly Reno, Sparks, and Carson City. Visitors also came from 39 California counties, with the highest percentage (5 percent) from Sacramento County (Figure 2). Of those visitors camping at Chilcoot, 73 percent came from Nevada, with 32 California counties represented among the remaining 27 percent. Sixty-two percent of the day users came from Nevada and 24 California counties were represented in the remainder.

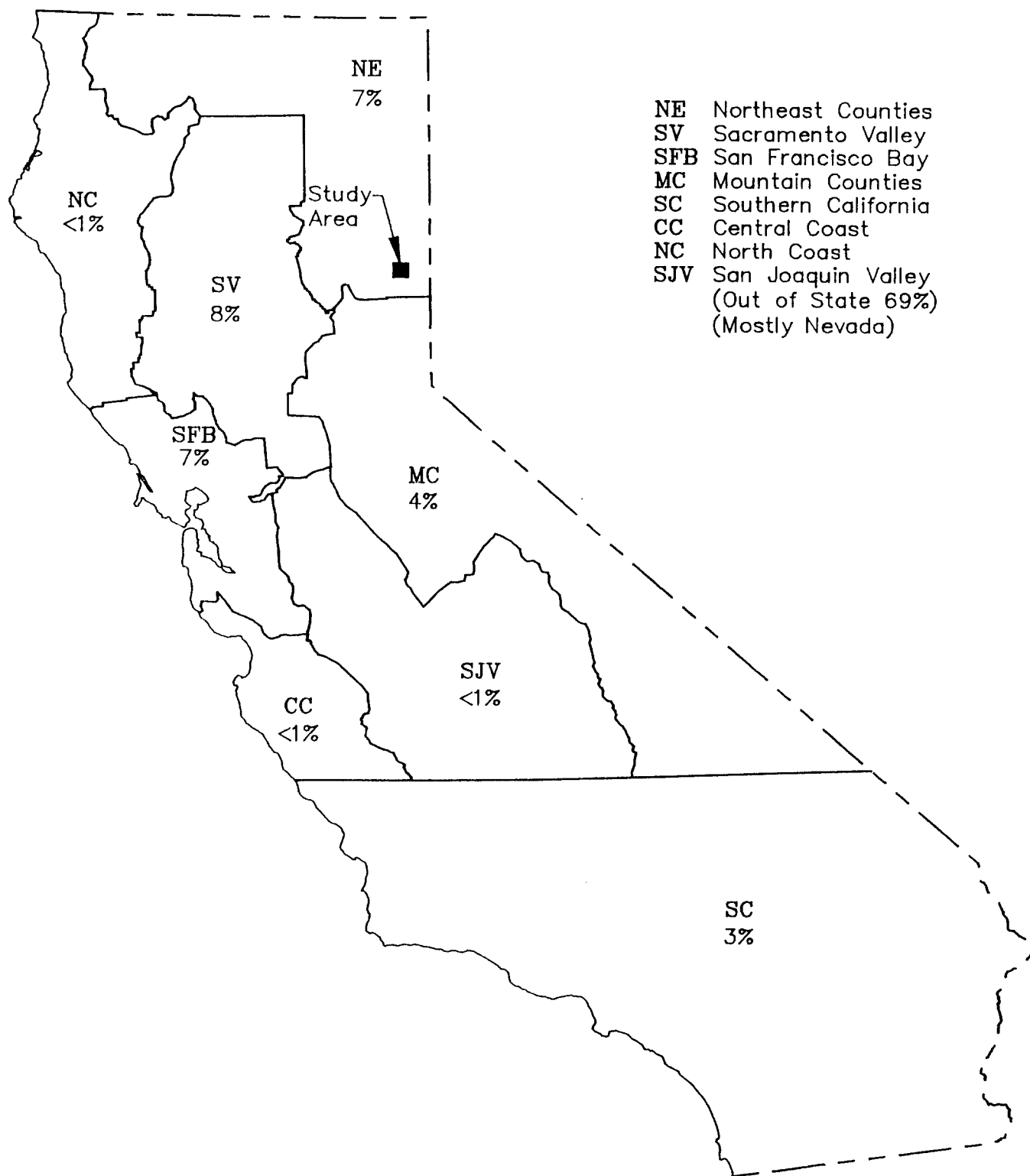


Figure 2 – Little Last Chance Creek Visitor Origin by County Groups in 1988

### Creel Census Data and Angler Success

Six hundred and seventy-two anglers were censused. They had fished a total of 1,281 hours. Observed catch was 293 rainbow trout and 62 brown trout. Two hundred and fifty-four other trout were either reported caught, or reported caught and then released back into the creek. Anglers considered most of the fish they released too small to keep. Observed catch per hour (i.e. excluding fish reported caught, or fish caught and released) for individual anglers ranged from none to 10.7 (eight trout in three-quarters of an hour).

Total fishing use was estimated at 7,400 hours ( $\pm 1,600$  hours) or about 3,400 angler-days, with an estimated catch of 3,230 rainbow trout (0.44 trout per hour) and 840 brown trout (0.11 trout per hour). Based on the number of fish anglers reported catching, and reported catching and releasing, as many as 2,100 additional trout may have been caught and/or caught and released. No other species of fish were observed or reported caught this year. Including all fish caught, reported caught, or reported caught and released, angler success was 0.83 fish per hour.

Mean lengths of fish in the creel were 21.4 cm (8.5 inches) for rainbow trout and 28.4 cm (11.2 inches) for brown trout. The largest fish observed was a brown trout measuring 49.0 cm fork length (19.3 inches), which was caught on opening weekend. Two 47.0 cm brown trout were censused on October 30, and four other large brown trout (37.5 to 43 cm) were censused during the season (See Appendixes III and IV). An estimated 372 kg (819 lbs) of rainbow trout and 296 kg (652 lbs) of brown trout were caught and removed from Little Last Chance Creek by anglers.

About 73 percent of the anglers fished with bait, 11 percent with flies, 8 percent with lures, and 7 percent used more than one type of terminal gear.

The places of residence for anglers at Little Last Chance Creek was slightly different than the general recreationists. Only about 47 percent were from Nevada, with a few from Oregon. Residents of the San Francisco Bay Area made up 17 percent, with 14 percent from the Sacramento Valley and 11 percent from the Northeast Counties (Figure 3).

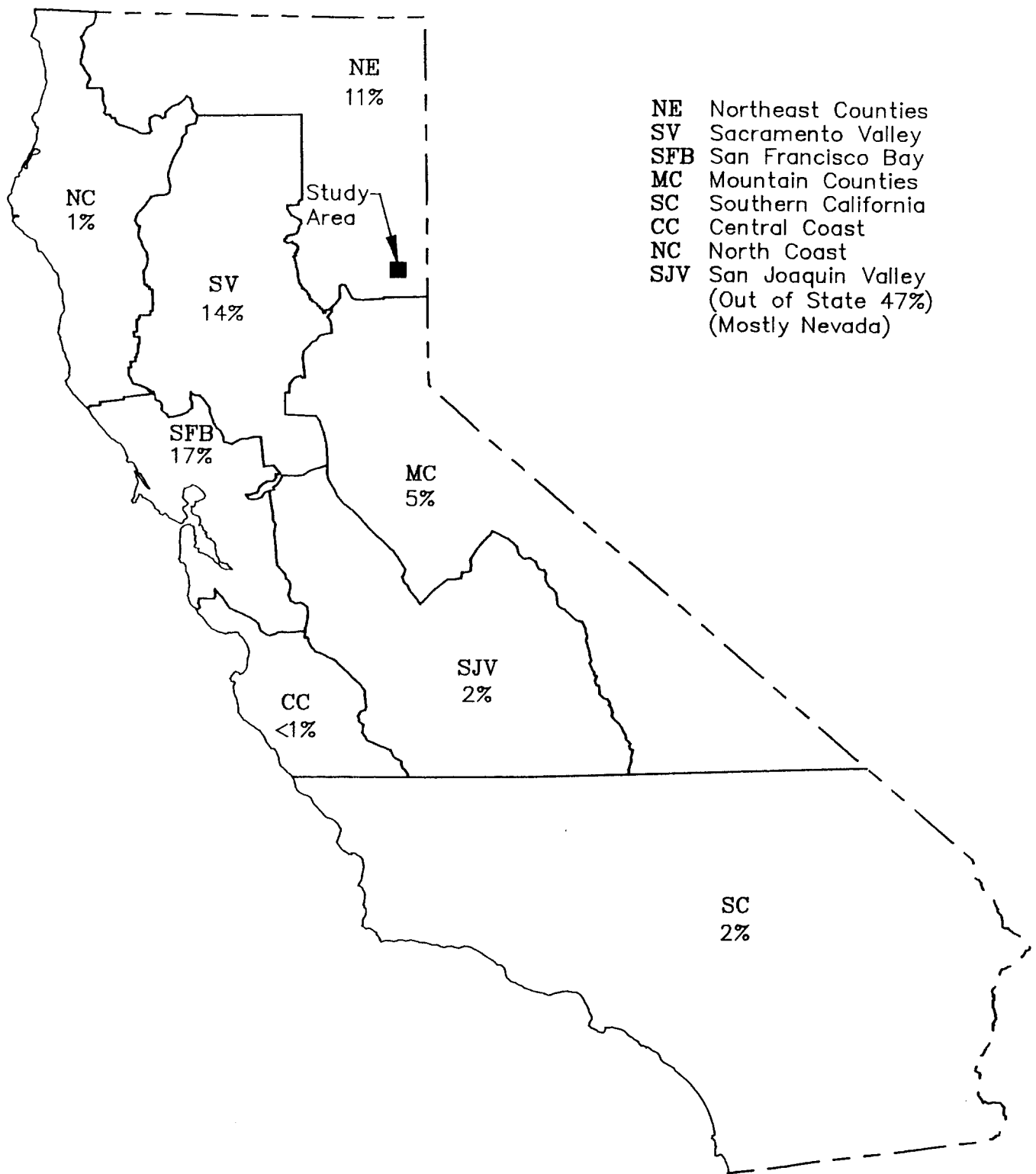


Figure 3 — Little Last Chance Creek Angler Origin by County Groups in 1988

## DISCUSSION

Understanding the limitations of the recreation use survey and the creel census helps put the data obtained in the proper perspective. This section describes the survey limitations and compares estimates of recreation use at Frenchman Reservoir and Little Last Chance Creek with the forecasts that were made when the project was planned more than 30 years ago.

### Limitations of Use Counts and Creel Census

Most recreationists using the creek were easily observed during the use counts. The most difficulty we encountered in making the use counts was at Chilcoot Campground, because not everyone there was always visible. Some people may have been temporarily out of sight during use count periods; perhaps inside travel trailers, restrooms, or other locations not visible to the surveyor.

Most vehicles along Little Last Chance Creek can be associated with recreationists, construction workers, or U.S. Forest Service workers. However, people were not found for some vehicles during the use count periods. Counts of vehicles we could not directly associate with people suggest the estimate of total recreation use could be as much as 12 percent low.

We interviewed about 24 percent of the recreationists we saw at Little Last Chance Creek during 1988 and censused about 17 percent of the estimated hours of fishing use.

In general, it was our impression that much of the recreation use at Chilcoot Campground was not directly related to Little Last Chance Creek. To a large degree, the campground is a place to "get away" and "relax" for residents of the greater Reno/Sparks urban area. Recreation surveys that DWR conducted at Big Grizzly Creek and Indian Creek in 1986 showed that a large proportion of visitors to these creeks were from Plumas County (42 and 23 percent respectively). Plumas County visitors to Little Last Chance Creek in 1988 totaled only 3 percent of the general recreationists and 5 percent of the anglers.

### Comparison of Survey Results with Previous Estimates

In general, recreation use at the Upper Feather River reservoirs (Antelope, Davis, and Frenchman) has far exceeded the estimates made when these projects were planned (DWR, 1974 and DWR, 1989). For example, the cumulative total use at Frenchman Reservoir from 1962 through 1988 was 6,543,000 recreation days. The planning estimates for the same period total only 2,909,000 recreation days. Thus, the actual use to date has been about 2.25 times the predicted use.

Since Frenchman Reservoir was not operated specifically for downstream fishery and recreation purposes, the lower reaches of Little Last Chance Creek were expected to be relatively useless for angling and associated recreation under project conditions (DWR, 1957). Consequently, stream recreation use was expected to be minimal. The loss of recreation potential here was expected to be replaced by the increased stream recreation potential provided by the Indian Creek Project (Antelope, Abbey Bridge, and Dixie Refuge Reservoirs).

However, Little Last Chance Creek has proven to be a significant recreation resource. Construction of Chilcoot Campground about 1970 provided a facility for people who preferred to camp or picnic there rather than at Frenchman Reservoir. In addition, the stream fishery is better than might be expected, considering the relatively erratic flow releases required to meet irrigation needs.

Expressed in terms of use per stream mile, general recreation use and angling on Little Last Chance Creek in 1988 greatly exceeded the use recorded for Indian Creek (below Antelope Dam) and Big Grizzly Creek (below Lake Davis) in 1986. There is no overnight facility comparable to Chilcoot Campground on either Indian Creek or Big Grizzly Creek, so the larger amount of general recreation on Little Last Chance Creek was not surprising. However, the relatively high fishing pressure was unexpected, and is probably related to the large number of campground users (Table 2).

Table 2

Comparison of General Recreation, Fishing Use, Catch, and Angling  
Quality on Little Last Chance, Indian, and Big Grizzly Creeks

	<u>LLC Creek</u>	<u>Indian Creek</u>	<u>Big Grizzly Creek</u>
Recreation Use (Recreation-days per mile of stream)	3,500	600	500
Fishing Use (Angler-days per mile of stream)	650	250	260
Trout Caught (per mile of stream)	780	470	550
Angling Quality (trout caught per hour)	0.55	0.68	0.81

Sources: Estimates for Little Last Chance Creek from pages 8-10 of this report and based on 5.2 miles of stream.

Estimates for Indian Creek from Tittle (1987a) (TIR No. 87-1) and based on 11.1 miles of stream.

Estimates for Big Grizzly Creek from Tittle (1987b) (TIR No. 87-2) and based on 4.25 miles of stream.

Planning estimates of recreation use at Frenchman Reservoir and Little Last Chance Creek with and without the project are summarized in Table 3. Estimated use for Little Last Chance Creek includes the use on the several miles of stream inundated by the reservoir.

Table 3  
Estimated and Actual Recreation Use of  
Frenchman Lake and Little Last Chance Creek  
(in recreation days)

<u>Year</u>	<u>Frenchman Reservoir</u>		<u>Little Last Chance Creek</u>	
	<u>Estimated Use</u>	<u>Actual Use</u>	<u>Estimated Use</u>	<u>Actual Use</u>
1962	32,000	30,000	1,400	Unknown
1963	61,000	105,000	1,500	"
1970	100,000	397,000	2,000	"
1975	114,000 <sup>1/</sup>	148,000	2,500 <sup>1/</sup>	"
1980	127,000	188,000	3,000	"
1985	136,000 <sup>1/</sup>	289,000	4,000 <sup>1/</sup>	"
1988	142,000 <sup>1/</sup>	230,000	4,600 <sup>1/</sup>	18,000

<sup>1/</sup> Interpolated figures.

Sources: Frenchman Reservoir and Little Last Chance Creek estimated use from DWR (1968). Little Last Chance Creek estimates represent streamside recreation use without the project. Streamside use with the project was expected to be minimal.

Frenchman Reservoir actual use from DWR (1989). Little Last Chance Creek actual use from page 8 of this report.



## ACKNOWLEDGEMENTS

Graduate Student Assistant Jerry Tittel and Student Assistant Karen Smith conducted most of the use counts, creel censuses, and interviews. They also compiled and summarized the most of the data. The author completed the data analysis and prepared this report.

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# APPENDIX I

## SCHEDULE FOR LITTLE LAST CHANCE CREEK RECREATION SURVEY

APRIL 30, 1988 to NOVEMBER 15, 1988

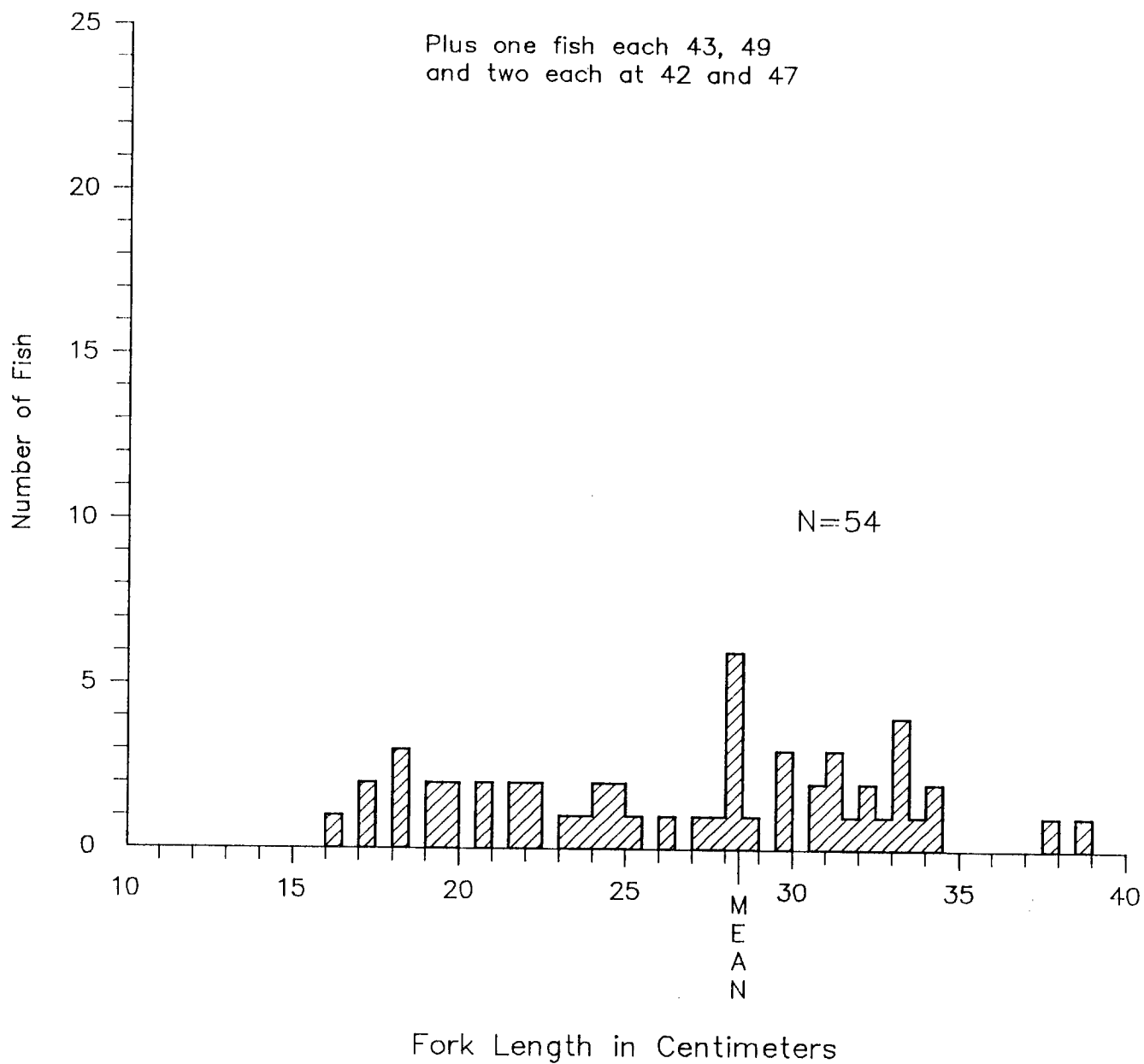
<u>Date</u>	<u>Holiday (HD)</u> <u>Weekend WE)</u> <u>Weekday (WD)</u>	<u>Survey</u> <u>Stratum</u>
April 30	WE	I
May 1	WE	I
May 5	WD	IV
May 10	WD	IV
May 28	HD	II
May 29	HD	II
May 30	HD	II
June 3	WD	IV
June 4	WE	III
June 5	WE	III
June 10	WD	IV
June 18	WE	III
June 21	WD	IV
June 26	WE	III
June 30	WD	IV
July 2	HD	VIII
July 18	WD	VI
July 19	WD	VI
July 30	WE	V
July 31	WE	V
August 1	WD	VI
August 7	WE	V
August 15	WD	VI
August 19	WD	VI
September 4	HD	VIII
September 10	WE	V
October 28	WD	VII
October 30	WE	VII

# APPENDIX II

## 1988 USE COUNT SCHEDULE FOR LITTLE LAST CHANCE CREEK

Date	Daylight Hours	Use Counts		Creel Census Time (approx.)
		Count	Time	
April-August DST	16-1/2	1st	0700-0800	0800-1300
		2nd	1000-1100	1400-1900
		3rd	1300-1400	
		4th	1600-1700	
		5th	1900-2000	
September DST	14	1st	0730-0830	0830-1230
		2nd	1000-1100	1330-1730
		3rd	1230-1330	
		4th	1500-1600	
		5th	1730-1830	
October DST	13	1st	0800-0900	0900-1230
		2nd	1000-1100	1300-1700
		3rd	1230-1330	
		4th	1500-1600	
		5th	1700-1800	

Appendix III  
 Length Frequency of Censused  
 Brown Trout, Little Last Chance Creek,  
 1988



Appendix IV  
Length Frequency of Censused  
Rainbow Trout, Little Last Chance Creek,  
1988

